

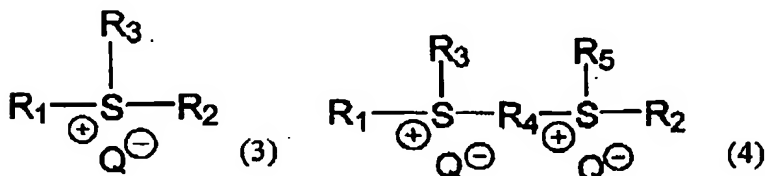
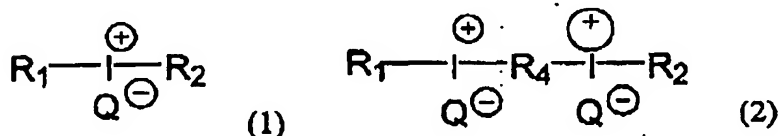
Applicants: Kyoichi Tomita, et al.

04/28/2004

Page 2

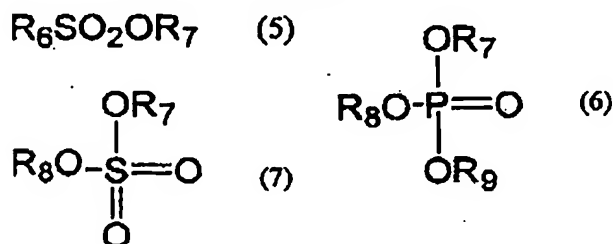
A) Amendments to the Claims:

1. (currently amended) A method for producing an onium salt derivative, characterized by comprising reacting an onium salt derivative which has a halide Q as an anion moiety and which is represented by any one of formulas (1) through (4):



wherein each of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>5</sub> represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; one or both of the pairs of R<sub>1</sub> and R<sub>3</sub>, and R<sub>2</sub> and R<sub>5</sub> may together form a divalent organic group; R<sub>4</sub> represents a C≤20 divalent organic group; and Q represents a halide anion,

with an ester compound which has an alkyl group R<sub>7</sub> and which is represented by any one of formulas (5) through (7):



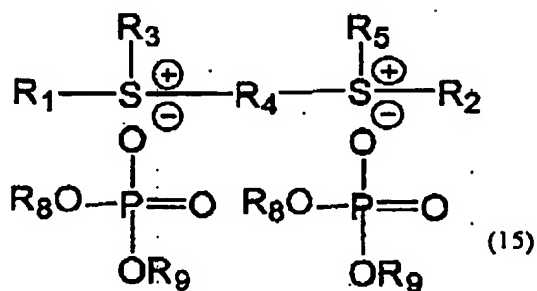
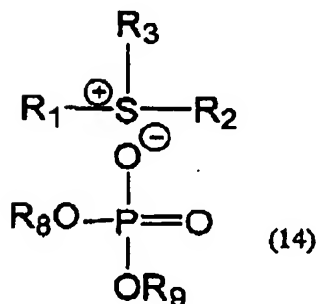
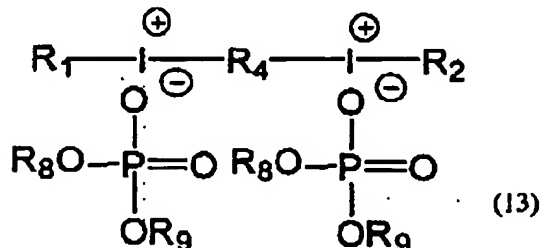
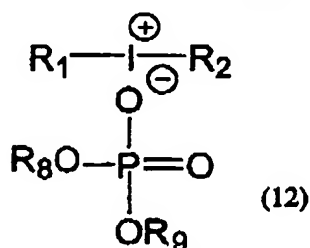
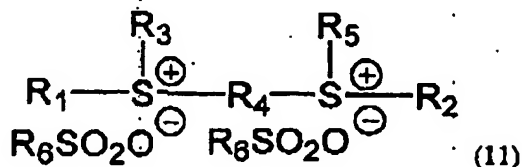
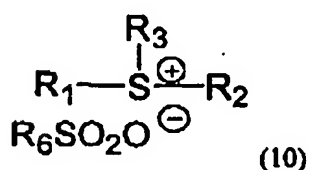
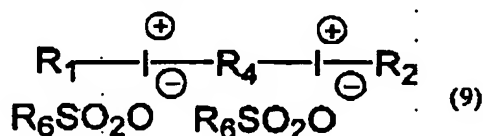
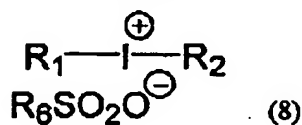
wherein R<sub>6</sub> represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, or an aralkyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; R<sub>7</sub> represents an alkyl group, having ≤5 carbon atoms and being optionally substituted; and each of R<sub>8</sub> and R<sub>9</sub> represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having ≤10 carbon atoms and being optionally substituted,

Applicants: Kyoichi Tomita, et al.

04/28/2004

Page 3

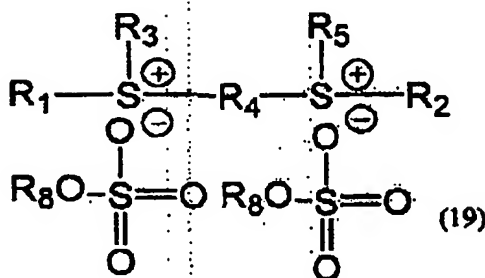
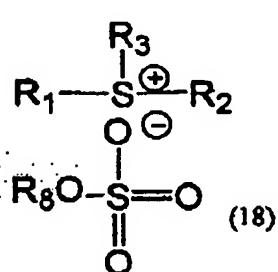
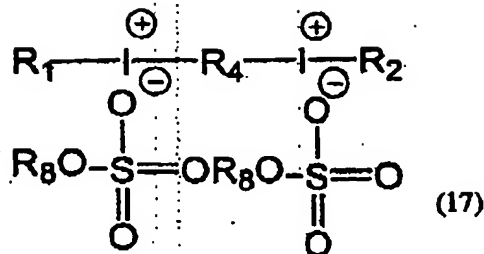
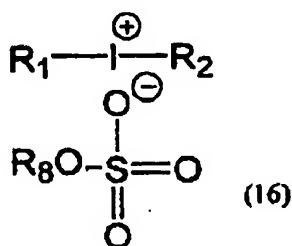
to thereby form  $R_7Q$  through nucleophilic attack by the halide Q on the alkyl group  $R_7$  of the ester compound, and to also produce an onium salt derivative which is formed of an anion represented by an any one of  $R_6SO_2O^-$ ,  $PO_4R_8R_9^-$ ,  $PO_4R_8R_9^-$ , and  $R_8SO_4^-$  derived from the ester ~~compound~~ compound and an onium cation derived from the onium salt, an onium salt derivative represented by one of formulas (8) through (19).



Applicants: Kyoichi Tomita, et al.

04/28/2004

Page 4



2. (cancelled)

3. (original) A method for producing an onium salt derivative according to claim 1, wherein reaction is carried out while removing generated R<sub>7</sub>Q from the reaction system.

4. (previously amended) A method for producing an onium salt derivative according to claim 1 or 3, wherein the reaction is carried out in a solvent.

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (cancelled)

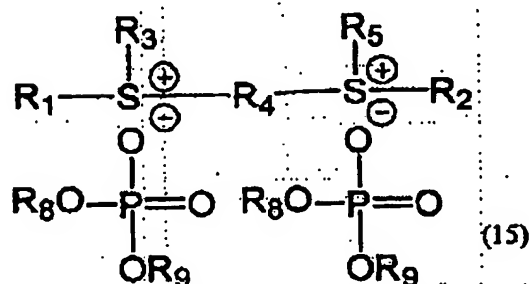
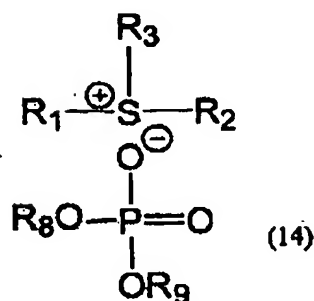
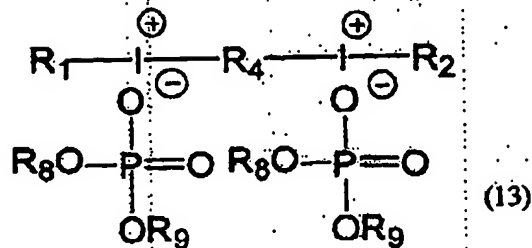
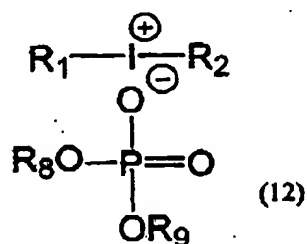
10. (cancelled)

11. (previously amended) An onium compound which has a phosphate derivative as an anion moiety and which is represented by any one of formulas (12) through (15):

Applicants: Kyoichi Tomita, et al.

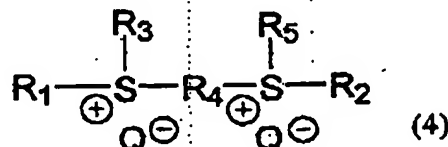
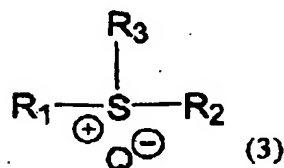
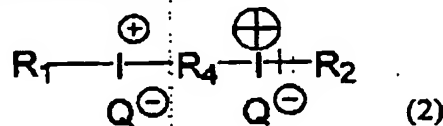
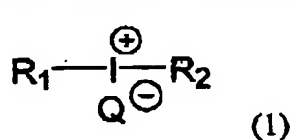
04/28/2004

Page 5



wherein each of  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$ , and  $\text{R}_5$  represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having  $\leq 25$  carbon atoms and being optionally substituted; one or both of the pairs of  $\text{R}_1$  and  $\text{R}_3$ , and  $\text{R}_2$  and  $\text{R}_5$  may together form a divalent organic group;  $\text{R}_4$  represents a  $\text{C}_{\leq 20}$  divalent organic group; and each of  $\text{R}_8$  and  $\text{R}_9$  represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having  $\leq 10$  carbon atoms and being optionally substituted.

12. (currently amended) A method for producing an onium salt derivative, characterized by comprising reacting an onium salt which has a halide Q as an anion moiety and which is represented by any one of the following formulas (1) through (4):

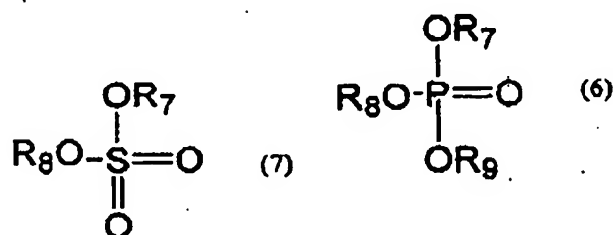


Applicants: Kyoichi Tomita, et al.

04/28/2004

Page 6

wherein each of  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having  $\leq 25$  carbon atoms and being optionally substituted; one or both of the pairs of  $R_1$  and  $R_3$ , and  $R_2$  and  $R_4$  may together form a divalent organic group;  $R_4$  represents a  $C \leq 20$  divalent organic group; and  $Q$  represents a halide anion or a  $C \leq 10$  carboxylate anion, with an ester compound which has an alkyl group  $R_7$  and which is represented by any one of formulas (6) or (7):



wherein  $R_7$  represents an alkyl group, having  $\leq 5$  carbon atoms and being optionally substituted; and each of  $R_8$  and  $R_9$  represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having  $\leq 10$  carbon atoms and being optionally substituted;

to thereby form  $R_7Q$  through nucleophilic attack by the halide  $Q$  on the alkyl group  $R_7$  of the ester compound, and to also produce an onium salt derivative which is formed of an anion represented by ~~an one of  $R_8\text{SO}_3\text{O}^-$ ,  $\text{PO}_4\text{R}_8\text{R}_9^-$ ,  $\text{PO}_4\text{R}_8\text{R}_9^-$~~  and or  $R_8\text{SO}_4^-$  derived from the ester compound and an onium cation derived from the onium salt, ~~an~~ and reacting the onium salt derivative and with a sulfonic acid derivative represented by formula (24):



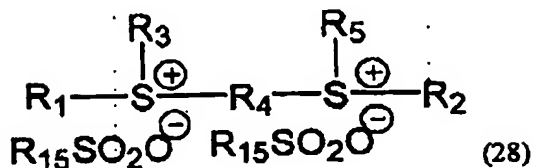
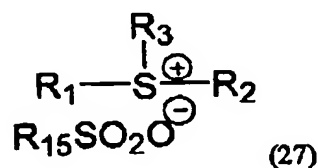
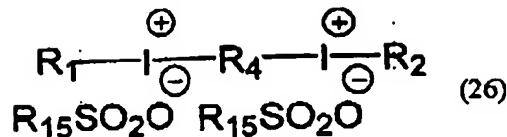
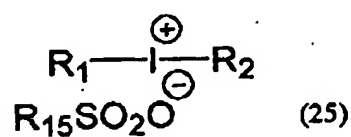
wherein  $R_{15}$  represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, or an aralkyl group, each of these groups having  $\leq 25$  carbon atoms and being optionally substituted; and  $Y$  represents a hydrogen atom, an alkali metal, or ammonium,

to thereby cause salt exchange and yield an onium salt derivative represented by one of formulas (25) through (28).

Applicants: Kyoichi Tomita, et al.

04/28/2004

Page 7



13. (previously submitted) A method for producing an onium salt derivative according to claim 12, wherein each of  $\text{R}_1$ ,  $\text{R}_4$  and  $\text{R}_9$  is a methyl group or an ethyl group.